

APPENDIX B
EMISSIONS INVENTORY

P-060100

Norm's Utility Contractor, Inc.
Portable Hot-Mix Asphalt Plant Permit Application
Facility-Wide Criteria Pollutant Emission Summary

Sources	Emission Rate (ton/year)					
	PM-10	NO _x	SO ₂	CO	VOC	Lead
Point Sources						
Ready Mix Generator	0.10	1.62	0.23	2.01	0.23	
Aggregate to bin	1.70					
Sand to bin	0.38					
Hopper loading	2.08					
Cement Silo Filling	0.04					
Fly Ash Silo Filling	0.04					
Batcher Vent (Cement & Fly Ash)	0.02					1.68E-07
Mix Loading	0.04					9.07E-08
Rock Crusher Generator	0.63	21.77	3.67	4.99	0.64	
Rock Crusher	8.30					
HMA Dryer	3.45	3.9	0.5	19.5	4.8	9.30E-05
Tank Heater	0.05	0.7	0.0	0.6	0.0	3.38E-06
Total	16.83	27.96	4.41	27.07	5.71	9.66E-05
Modeling Threshold	1.0	1.0	1.0	na	na	0.6
Modeling Required	Yes	Yes	Yes			No
Fugitive Sources						
Aggregate Storage	1.06					
Sand Storage	0.23					
Load-out, Silo and Asphalt Tank*				0.4	2.4	
Storage Pile	0.17					
Conveyors	0.36					
Paved Roads	1.01					
Unpaved Roads	1.66					
Total	23.2	28.0	4.4	27.4	6.1	9.7E-05

Sources	Emission Rate (lb/hr)					
	PM-10	NO _x	SO ₂	CO	VOC	Lead
Point Sources						
Emergency Generator	0.38	6.49	0.91	8.04	0.92	
Aggregate to bin	0.93					
Sand to bin	0.21					
Hopper loading	1.14					
Cement Silo Filling	0.02					
Fly Ash Silo Filling	0.02					
Batcher Vent (Cement & Fly Ash)	0.01					5.99E-08
Mix Loading	0.02					3.23E-08
Rock Crusher Generator	1.02	34.82	5.87	7.96	1.02	
Rock Crusher	13.25					
HMA Dryer	5.75	6.5	0.9	32.5	8.0	1.55E-04
Tank Heater	0.02	0.2	0.0	0.2	0.0	1.01E-06
Total	22.76	48.02	7.63	48.69	9.95	1.56E-04
Modeling Threshold	0.2	na	0.2	14.0	na	na
Modeling Required	Yes		Yes	Yes		
Fugitive Sources						
Aggregate Storage	0.55					
Sand Storage	0.12					
Load-out, Silo and Asphalt Tank*				0.6	4.0	
Storage Pile	0.28					
Conveyors	0.40					
Paved Roads	1.66					
Unpaved Roads	2.66					
Total	31.4	48.0	7.6	49.3	14.0	1.56E-04

Norm's Utility Contractor, Inc.
Portable Hot-Mix Asphalt Plant Permit Application
HMA Criteria Pollutant Emission Summary

Source	Emission Rate (ton/year)						
	PM	PM-10	NO _x	SO ₂	CO	VOC	Lead
Point Source							
HMA Dryer	3.5	3.5	3.9	0.5	19.5	4.8	9.30E-05
Tank Heater	0.1	0.1	0.7	0.004	0.6	0.04	3.38E-06
Sum	3.5	3.5	4.6	0.5	20.1	4.8	9.64E-05
Modeling Threshold	na	1.0	1.0	1.0	na	na	0.6
Modeling Required		Yes	Yes	No			No
Fugitive Sources							
Load-out, Silo and							
Asphalt Tank ^a	0.17	0.17			0.38	2.41	
Storage Pile	0.36	0.36					
Conveyors	1.01	1.01					
Paved Roads	1.66	1.66					
Unpaved Roads	1.85	1.85					
Total	8.5	8.5	4.6	0.5	20.4	7.3	9.6E-05

Source	Emission Rate (lb/hr)						
	PM	PM-10	NO _x	SO ₂	CO	VOC	Lead
Point Source							
HMA Dryer	5.8	5.8	6.5	0.9	32.5	8.0	1.55E-04
Tank Heater	0.02	0.02	0.2	0.001	0.2	0.01	1.01E-06
Sum	5.8	5.8	6.7	0.9	32.7	8.0	1.56E-04
Modeling Threshold	na	0.2	na	0.2	14.0	na	na
Modeling Required		Yes		Yes	Yes		
Fugitive Sources							
Load-out, Silo and							
Asphalt Tank ^a	0.3	0.3			0.6	4.0	
Storage Pile	0.4	0.4					
Conveyors	1.7	1.7					
Paved Roads	2.7	2.7					
Unpaved Roads	3.0	3.0					
Total	13.7	13.7	6.7	0.9	33.3	12.0	1.6E-04

^a Defined as Process Fugitive Emissions. EPA AP-42, Chapter 11.1 Hot Mix Asphalt Plants, (December 2005)

Norm's Utility Contractor, Inc.
Portable Hot-Mix Asphalt Plant Permit Application
Summary of HAP Emissions

Hazardous Air Pollutants

Pollutant	CAS #	Dryer lb/hr	Tank Heater lb/hr	Load-out Silo lb/hr	Total lb/hr	IDAPA 58.01 01.585/586 - EL (lb/hr)	Compare to EL
Non PAH							
Benzene	71-43-2	9.75E-02	4.23E-06	1.52E-03	9.90E-02	8.00E-04	Exceeds
Bromomethane	74-83-9			2.48E-04	2.48E-04	NA	
2-Butanone	78-93-3			1.70E-03	1.70E-03	3.93E+01	Below
Carbon Disulfide	75-15-0			6.23E-04	6.23E-04	2.00E+00	Below
Chloroethane	75-00-3			1.24E-04	1.24E-04	NA	
Chloromethane	74-87-3			8.57E-04	8.57E-04	NA	
Cumene	92-82-8			1.14E-03	1.14E-03	1.63E+01	Below
Ethylbenzene	100-41-4	6.00E-02		4.07E-03	6.41E-02	2.90E+01	Below
Formaldehyde	50-00-0	7.75E-01	1.51E-04	2.19E-02	7.97E-01	5.10E-04	Exceeds
Hexane	110-54-3	2.30E-01	3.63E-03	4.61E-03	2.38E-01	1.20E+01	Below
Isooctane (2,2,4-trimethylpentane)	540-84-1	1.00E-02		2.82E-05	1.00E-02	NA	Below
Methyl chloroform	71-55-6	1.20E-02			1.20E-02	1.27E+02	Below
Styrene	100-42-5			2.40E-04	2.40E-04	6.67E+00	Below
Tetrachloroethene	127-18-4			8.01E-05	8.01E-05	1.30E-02	Below
Toluene	108-88-3	3.75E-02	6.85E-06	4.07E-03	4.16E-02	2.50E+01	Below
Trichlorofluoromethane	75-69-4			1.35E-05	1.35E-05	NA	Below
m-/p-Xylene	1330-20-7	5.00E-02		1.04E-02	6.04E-02	2.90E+01	Below
o-Xylene	95-47-6			2.57E-03	2.57E-03	2.90E+01	Below
3-Methylchloranthrene	56-49-5		1.80E-06		1.80E-06	2.50E-06	Below
Naphthalene	91-20-3	2.25E-02	6.10E-04		2.31E-02	3.33E+00	Below
Pentane	109-66-0		2.60E+00		2.60E+00	1.18E+02	Below
Benzo(a)pyrene	50-32-8	1.20E-06	2.42E-09		1.20E-06	2.00E-06	Below
PAH							
2-Methylnaphthalene	91-57-6	1.85E-02			1.85E-02		
Acenaphthene	83-32-9	3.50E-04		5.20E-04	8.70E-04		
Acenaphthylene	208-96-8	2.15E-03		3.28E-05	2.18E-03		
Anthracene	120-12-7	5.50E-05		1.42E-04	1.97E-04		
Benzo(a)anthracene	56-55-3	5.25E-05	3.63E-09	5.17E-05	1.04E-04		
Benzo(a)pyrene	50-32-8	2.45E-06	2.42E-09	1.96E-06	4.41E-06		
Benzo(b)fluoranthene	205-99-2	2.50E-05	3.63E-09	6.48E-06	3.15E-05		
Benzo(e)pyrene	192-97-2	2.75E-05		1.27E-05	4.02E-05		
Benzo(g,h,i)perylene	191-24-2	1.00E-05		1.62E-06	1.16E-05		
Benzo(k)fluoranthene	207-08-9	1.03E-05	3.63E-09	1.88E-06	1.21E-05		
Chrysene	218-01-9	4.50E-05	3.63E-09	2.21E-04	2.66E-04		
Dibenz(a,h)anthracene	53-70-3		2.42E-09	3.15E-07	3.18E-07		
Fluoranthene	205-44-0	1.53E-04		1.38E-04	2.90E-04		
Fluorene	86-73-7	9.50E-04		1.30E-03	2.25E-03		
Indeno(1,2,3-cd)pyrene	193-39-5	1.75E-06	3.63E-09	4.01E-07	2.15E-06		
2-Methylnaphthalene				5.37E-03	5.37E-03		
Perylene	198-55-0	2.20E-06		3.78E-05	4.00E-05		
Phenanthrene	85-01-8	1.90E-03		1.83E-03	3.73E-03		
Pyrene	129-00-0	1.35E-04		4.07E-04	5.42E-04		
Total		1.32E+00		6.43E-02	3.99E+00		

Norm's Utility Contractor, Inc.
Portable Hot-Mix Asphalt Plant Permit Application
Summary of HAP Emissions

Metal Air Pollutants

Pollutant		Dryer lb/hr	Tank Heater lb/hr	Load-out Silo lb/hr	Total lb/hr	IDAPA 58.01.01.585/586 - EL (lb/hr)	Compare to EL
Antimony	7440-36-0	4.50E-05			4.50E-05	0.033	Below
Arsenic	7440-38-2	1.40E-04	4.03E-07		1.40E-04	1.50E-06	Exceeds
Barium	7440-39-3	1.45E-03	8.86E-06		1.46E-03	0.33	Below
Beryllium	440-41-7		1.20E-05		1.20E-05	2.80E-05	Below
Cadmium	7440-43-9	1.03E-04	2.22E-06		1.05E-04	3.70E-06	Exceeds
Chromium	7440-47-3	1.38E-03	2.82E-06		1.38E-03	5.60E-07	Exceeds
Cobalt	7440-48-4	6.50E-06	1.69E-07		6.67E-06	0.0033	Below
Copper	7440-50-8	7.75E-04	1.71E-06		7.77E-04	0.013	Below
Hexavalent chromium	7440-47-3	1.13E-04			1.13E-04	5.60E-07	Exceeds
Lead		1.55E-04	1.01E-06		1.56E-04	NA	Below
Manganese	7439-96-5	1.93E-03	7.65E-07		1.93E-03	0.067	Below
Mercury	7439-97-6	6.00E-05	5.24E-07		6.05E-05	0.001	Below
Molybdenum	7439-98-7		2.22E-06		2.22E-06	3.33E-01	Below
Nickel	7440-02-0	1.58E-02	4.23E-06		1.58E-02	2.70E-05	Exceeds
Phosphorus	7723-14-0	7.00E-03			7.00E-03	0.007	Below
Silver	7440-22-4	1.20E-04			1.20E-04	0.007	Below
Selenium	7782-49-2	8.75E-05	4.83E-08		8.75E-05	0.013	Below
Thallium	7440-28-0	1.03E-06			1.03E-06	0.007	Below
Vanadium	1314-62-1		4.63E-06		4.63E-06	3.00E-03	Below
Zinc	7440-66-6	1.53E-02	2.90E-02		4.43E-02	0.667	Below
Total		4.44E-02			7.34E-02		

Norm's Utility Contractor, Inc.
Portable Hot-Mix Asphalt Plant Permit Application
Drum Mix Dryer Potential to Emit Calculations

Assumptions:

Rated Capacity 88.2 MMBtu/hr
 250 t/hr max throughput rate
 300,000 t/yr max throughput rate

**Air Pollution
 Control Device** Baghouse

Fuel:

Natural Gas* 1050 Btu/scf

Calculations

Criteria Pollutants*

Pollutant	EF lb/ton HMA	PTE	
		lb/hr	t/yr
NOx	0.020	8.50	3.90
CO	0.13	32.50	19.50
PM-10 ^b	0.023	5.75	3.45
SO ₂	0.0034	0.85	0.51
VOC	0.032	8.00	4.80

* Heat Value from the United States Environmental Protection Agency (EPA) AP-42, Appendix A, Typical Parameters of Various Fuels, (From web site, December 2005)

^b CO, NO_x, SO₂ from EPA AP-42, Table 11.1-7 (December 2005), VOC from Table 11.1-8, (December 2005)

^c Total PM for a dryer with a fabric filter, EPA AP-42, Table 11.1-7 (December 2005). Assume PM is equal to PM-10.

**Norm's Utility Contractor, Inc.
Portable Hot-Mix Asphalt Plant Permit Application
Drum Mix Dryer Potential to Emit Calculations (HAP)**

Hazardous Air Pollutants*

Pollutant	CAS #	EF lb/ton HMA	PTE		IDAPA 58.01 .01 585/598 - EL (lb/yr)	Comparison
			Rate	Day		
Non PAH	75-07-0				3.00E-03	
Acetaldehyde	107-02-8				1.70E-02	Exceeds
Acrolein	71-43-2	0.00039	9.75E-02	5.85E-02	8.00E-04	Below
Benzene	100-41-4	0.00024	8.00E-02	3.80E-02	2.80E+01	Exceeds
Ethylbenzene	50-00-0	0.0031	7.75E-01	4.65E-01	5.10E-04	Exceeds
Formaldehyde	110-54-3	0.00092	2.30E-01	1.38E-01	1.20E+01	Below
Hexane						
Isooctane (2,2,4-trimethylpentane)	540-84-1	4.00E-05	1.00E-02	8.00E-03	NA	
Methyl chloroform	71-55-8	4.80E-05	1.20E-02	7.20E-03	1.27E+02	Below
Toluene	108-88-3	0.00015	3.75E-02	2.25E-02	2.50E+01	Below
Xylene	1330-20-7	0.0002	5.00E-02	3.00E-02	2.90E+01	Below
PAH						
2-Methylnaphthalene	91-57-8	7.40E-05	1.85E-02	1.11E-02		
Acenaphthene	83-32-9	1.40E-06	3.50E-04	2.10E-04		
Acenaphthylene	208-96-8	8.60E-06	2.15E-03	1.28E-03		
Anthracene	120-12-7	2.20E-07	5.50E-05	3.30E-05		
Benzo(a)anthracene	56-55-3	2.10E-07	5.25E-05	3.15E-05		
Benzo(a)pyrene	50-32-8	9.80E-09	2.45E-06	1.47E-06		
Benzo(b)fluoranthene	205-99-2	1.00E-07	2.50E-05	1.50E-05		
Benzo(e)pyrene	192-97-2	1.10E-07	2.75E-05	1.65E-05		
Benzo(g,h,i)perylene	191-24-2	4.00E-08	1.00E-05	6.00E-06		
Benzo(k)fluoranthene	207-08-9	4.10E-08	1.03E-05	6.15E-06		
Chrysene	218-01-9	1.80E-07	4.50E-05	2.70E-05		
Fluoranthene	206-44-0	6.10E-07	1.53E-04	9.15E-05		
Fluorene	98-73-7	3.80E-06	9.50E-04	5.70E-04		
Indeno(1,2,3-cd)pyrene	193-39-5	7.00E-06	1.75E-08	1.05E-08		
Naphthalene	91-20-3	9.00E-05	2.25E-02	1.35E-02		
Perylene	196-55-0	8.80E-09	2.20E-06	1.32E-06		
Phenanthrene	85-01-8	7.80E-06	1.90E-03	1.14E-03		
Pyrene	129-00-0	5.40E-07	1.35E-04	8.10E-05		
Total for Comparison ^c			1.84E-04		9.10E-05	Exceeds
Total			1.32E+00	7.91E-01		

**Norm's Utility Contractor, Inc.
Portable Hot-Mix Asphalt Plant Permit Application
Drum Mix Dryer Potential to Emit Calculations (HAP)
Metal Air Pollutants^a**

Pollutant	CAS	EF lb/ton HMA	PTE		IDAPA 58.01.01.585/586 - EL (lb/hr)	Comparison
			lb/hr	lb/hr		
Antimony	7440-36-0	1.80E-07	4.50E-05	2.70E-05	0.033	Below
Arsenic	7440-38-2	5.80E-07	1.40E-04	8.40E-05	1.50E-06	Exceeds
Barium	7440-39-3	5.80E-06	1.45E-03	8.70E-04	0.33	Below
Cadmium	7440-43-9	4.10E-07	1.03E-04	6.15E-05	3.70E-06	Exceeds
Chromium	7440-47-3	5.50E-06	1.38E-03	8.25E-04	5.80E-07	Exceeds
Cobalt	7440-48-4	2.60E-08	6.50E-06	3.90E-06	0.0033	Below
Copper	7440-50-8	3.10E-06	7.75E-04	4.65E-04	0.013	Below
Hexavalent chromium	7440-47-3	4.50E-07	1.13E-04	6.75E-05	5.60E-07	Exceeds
Lead		6.20E-07	1.55E-04	9.30E-05		
Manganese	7439-96-5	7.70E-06	1.93E-03	1.16E-03	0.067	Below
Mercury	7439-97-6	2.40E-07	6.00E-05	3.60E-05	0.001	Below
Nickel	7440-02-0	6.30E-05	1.58E-02	9.45E-03	2.70E-05	Exceeds
Phosphorus	7723-14-0	2.80E-05	7.00E-03	4.20E-03	0.007	Below
Silver	7440-22-4	4.80E-07	1.20E-04	7.20E-05	0.007	Below
Selenium	7782-49-2	3.50E-07	8.75E-05	5.25E-05	0.013	Below
Thallium	7440-28-0	4.10E-09	1.03E-06	6.15E-07	0.007	Below
Zinc	7440-66-8	6.10E-05	1.53E-02	9.15E-03	0.667	Below
Total			4.44E-02	2.66E-02		

^a EPA AP-42, Table 11.1-10, (December, 2005)

^b EPA AP-42, Table 11.1-12, (December, 2005)

^c As listed in IDAPA 58.01.01.586 (December, 2005)